

PAIN

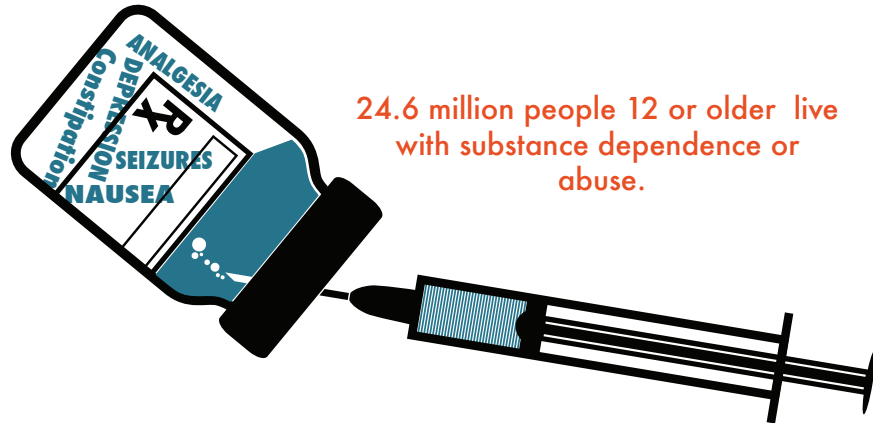
How does GSU-iGEM plan to ease it?

WHAT IS THE GSU-iGEM PROJECT?

IT STARTED WITH THE NEED TO HELP



The main focus of our project is to utilize bioengineered microorganisms to create non-psychoactive cannabinoids and nonaddictive analgesics.



THE PROBLEM WITH PSYCHOACTIVE CANNABINOIDS

Haleigh's Hope Act allows Georgians to use CBD oil as a form of treatment for certain debilitating conditions. Low levels of THC are contained in some of the CBD oil available to eligible patients, and this is unfortunate because THC can induce an unwanted and unpleasant high.

THE PROBLEM WITH MODERN ANALGESICS

Analgesics are used routinely for the treatment of acute severe pain following trauma, extensive burns or surgery. The problem is that the most powerful analgesics are also the most liable to cause abuse and addiction.

FIXING THE PROBLEMS

GSU-iGEM: NATURAL PRODUCTS FROM SYNTHETIC BIOLOGY

HELPING
500,000
SUFFERING

PRODUCT #1 PRODUCE THC FREE CBD OIL

MANUFACTURING A PROTEIN EXPRESSION SYSTEM TO PRODUCE CBDA SYNTHASE IN TOBACCO PLANTS USING AGROBACTERIUM

Benefits from developing this system:

NOT PSYCHOACTIVE:
Eliminates the production of THC.



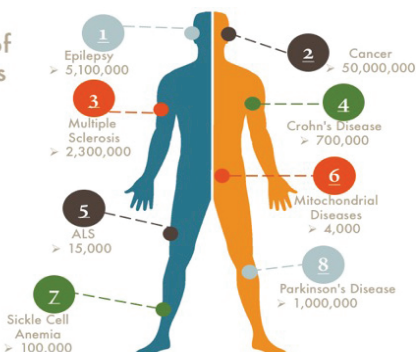
ECONOMY:

Generate millions of tax dollars in taxes & will generate jobs in GA.

QUALITY CONTROL:
Will help create standard medical dosages.

Georgians who Benefit from THC free CBD Oil

➤ Number of Americans with Condition



PRODUCT #2 PRODUCE NON-ADDICTIVE ANALGESICS

ENGINEERING THE PGAP α VECTOR SYSTEM TO EXPRESS THE MAMBALGIN IN PICHIA PASTORIS

Benefits from developing this system:

STRONG ANALGESICS:
Mambalgin is a protein that directly blocks pain.

NON-NARCOTIC:
Acts on pain receptors in the skin instead of opioid receptors in the brain.

COST EFFECTIVE:
Mambalgin is usually obtained from the venom of Black Mambas which makes it expensive & dangerous to obtain. Making it synthetically via the GSU-iGEM way is cheap and safe.



GSU iGEM TEAM

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